

What is claimed is:

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1. An electrophotographic image printing method for an electrophotographic imaging
apparatus, comprising the steps of:

providing an electrophotographic imaging apparatus, the electrophotographic imaging
apparatus including: a charge roller; a developer roller; a laser scanning unit; a transfer roller; an
organic photoconductor; a power supply unit for supplying power to the charge roller, the
developer roller, the laser scanning unit, and the transfer roller; and a controller for controlling
the power supply unit, the charge roller, the developer roller, the laser scanning unit, the transfer
roller, and the organic photoconductor;

selecting a resolution for electrophotographic printing;

charging the organic photoconductor by selectively applying to the charge roller a charge
voltage corresponding to the resolution selected for the electrophotographic printing;

forming an electrostatic latent image on the charged organic photoconductor by the laser
scanning unit and applying toner particles adhering to the developer roller to the electrostatic
latent image to form a visible image; and

transferring the visible image formed on the organic photoconductor to a print medium.

2. The method of claim 1, further comprised of:

setting the charge voltage applied to the charge roller to be relatively higher in magnitude

for a lower level of the resolution selected than for a higher level of the resolution selected.

3. The method of claim 1, further comprised of:

the resolution selected being any one of 600 dpi. and 1200 dpi.

4. The method of claim 1, further comprised of:

applying a charge voltage of -1.35 kV to the charge roller as the charge voltage when the resolution selected is 1200 dpi., and applying a charge voltage to the charge roller of -1.4 kV as the charge voltage when the selected resolution is 600 dpi.

5. The method of claim 1, further comprised of:

applying selectively the charge voltage to the charge roller to reduce gray pattern level variation.

6. The method of claim 5, further comprised of:

reducing the gray pattern level variation at a low resolution by applying a charge voltage to the charge roller that is relatively increased in magnitude with respect to a charge voltage applied to the charge roller to reduce the gray pattern level variation at a high resolution.

7. The method of claim 1, further comprised of:

2 selectively adjusting the charge voltage applied to the charge roller corresponding to the
3 resolution selected for the electrophotographic printing to reduce image concentration variation.

8. An electrophotographic printing method for an electrophotographic imaging
2 apparatus, comprising the step of:

3 providing an electrophotographic imaging apparatus, the electrophotographic imaging
4 apparatus including: a charge roller; a developer roller; a laser scanning unit; a transfer roller; an
5 organic photoconductor; a power supply unit for supplying power to the charge roller, the
6 developer roller, the laser scanning unit, and the transfer roller; and a controller for controlling
7 the power supply unit the charge roller, the developer roller, the laser scanning unit, the transfer
8 roller, and the organic photoconductor:

9 selecting a print mode for electrophotographic printing;

10 charging the organic photoconductor by selectively applying to the charge roller a charge
11 voltage corresponding to the print mode selected for the electrophotographic printing;

12 forming an electrostatic latent image on the charged organic photoconductor by the laser
13 scanning unit and applying toner particles adhering to the developer roller to the electrostatic
14 latent image to form a visible image; and

15 transferring the visible image formed on the organic photoconductor to a print medium.

9. The electrophotographic printing method of claim 8, further comprised of:

3 setting the charge voltage to be relatively higher in magnitude for a text mode as the print
mode selected than for a graphics mode as the print mode selected.

1 10. The method of claim 8, further comprised of:

2 the print mode selected corresponding to one of a text mode and a graphics mode.

11. The method of claim 10, further comprised of:

the text mode being of a relatively lower resolution than a resolution for the graphics
mode.

12. The method of claim 8, further comprised of:

applying to the charge roller a charge voltage of -1.4 kV as the charge voltage when the
print mode selected is a text mode, and applying a charge voltage to the charge roller of -1.35 kV
as the charge voltage when the print mode selected is a graphics mode.

1 13. The method of claim 8, further comprised of:

2 applying selectively the charge voltage to the charge roller to reduce gray pattern level
3 variation.

1 14. The method of claim 13, further comprised of:

3 reducing the gray pattern level variation at a low resolution by applying a charge voltage
4 to the charge roller that is relatively increased in magnitude with respect to a charge voltage
5 applied to the charge roller to reduce the gray pattern level variation at a high resolution.

1 15. The method of claim 8, further comprised of:
2 selectively adjusting the charge voltage applied to the charge roller corresponding to the
3 print mode selected for the electrophotographic printing to reduce image concentration variation.

4 16. An electrophotographic imaging apparatus for electrophotographic printing,
5 comprising:

6 a charge roller;
7 a developer roller;
8 a laser scanning unit;
9 a transfer roller;
10 an organic photoconductor;
11 a power supply unit for supplying power to the charge roller, the developer roller, the
12 laser scanning unit, and the transfer roller;
13 a controller for controlling the power supply unit, the charge roller, the developer roller,
14 the laser scanning unit, the transfer roller, and the organic photoconductor;
15 means for selecting a resolution for electrophotographic printing;

13 means for charging the organic photoconductor that selectively applies to the charge
14 roller a charge voltage to charge the organic photoconductor, the charge voltage corresponding to
15 the resolution selected for the electrophotographic printing;

16 means for forming an electrostatic latent image on the charged organic photoconductor
17 and for applying toner particles adhering to the developer roller to the electrostatic latent image
18 to form a visible image; and

19 means for transferring the visible image formed on the organic photoconductor to a print
20 medium.

21 17. The electrophotographic imaging apparatus of claim 16, further comprised of:

22 the means for charging selectively charges the charge roller with a charge voltage that is
23 relatively higher in magnitude for a lower level of the selected resolution than for a higher level
24 of the selected resolution.

25 18. The electrophotographic imaging apparatus of claim 16, further comprised of:

26 the means for selecting is for selecting a resolution of one of 1200 dpi. and 600 dpi.

27 19. The electrophotographic imaging apparatus of claim 18, further comprised of:

28 the means for charging applies to the charge roller a charge voltage of -1.35 kV as the
29 charge voltage when the resolution selected is 1200 dpi., and the means for charging applies a

4 charge voltage to the charge roller of -1.4 kV as the charge voltage when the resolution selected
5 is 600 dpi.

20. The electrophotographic printing apparatus of claim 16, further comprised of:

the means for charging selectively applies to the charge roller a charge voltage of one of -
3 1.4kV and -1.35kV as the charge voltage.

21. An electrophotographic imaging apparatus for electrophotographic printing,
comprising:

a charge roller;

a developer roller;

a laser scanning unit;

a transfer roller;

an organic photoconductor;

a power supply unit for supplying power to the charge roller, the developer roller, the
9 laser scanning unit, and the transfer roller;

10 a controller for controlling the power supply unit, the charge roller, the developer roller,
11 the laser scanning unit, the transfer roller, and the organic photoconductor;

12 means for selecting a print mode for electrophotographic printing;

13 means for charging the organic photoconductor that applies to the charge roller a charge

14 voltage to charge the organic photoconductor, the charge voltage corresponding to the print mode
15 selected for the electrophotographic printing;

16 means for forming an electrostatic latent image on the charged organic photoconductor
and for applying toner particles adhering to the developer roller to the electrostatic latent image
18 to form a visible image; and

19 means for transferring the visible image formed on the organic photoconductor to a print
20 medium.

22. The electrophotographic imaging apparatus of claim 21, further comprised of:

the means for charging selectively charges the charge roller with a charge voltage that is
relatively higher in magnitude for a text mode as the print mode selected than for a graphics
mode as the print mode selected.

23. The electrophotographic imaging apparatus of claim 21, further comprised of:

the print mode selected being one of a text mode and a graphics mode.

24. The electrophotographic imaging apparatus of claim 23, further comprised of:

the means for charging applies to the charge roller a charge voltage of -1.35 kV as the
charge voltage when the print mode selected is the graphics mode, and the means for charging
applies to the charge roller a charge voltage of -1.4 kV as the charge voltage when the print mode

5 selected is the text mode.

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1 25. The electrophotographic printing apparatus of claim 21, further comprised of:

2 the means for charging selectively applies to the charge roller a charge voltage of one of -

3 1.4 kV and -1.35 kV as the charge voltage.

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